

Surviving an In-Flight Emergency

National Transportation Safety Board (NTSB) statistics from 1961 to 2001 for on-demand air taxis show that the majority of aircraft crashes do have survivors (www.nts.gov/NTSB/query.asp). What makes the difference between surviving and not surviving a potentially life-threatening situation is having:

- The skills to rely on in the situation.
- Equipment to survive the situation.
- Training in the use of that equipment.
- A positive attitude.

Preparation for surviving in-flight emergencies is even more critical for air medical escorts than for other air travelers. Air medical escorts are responsible not only for themselves, but also for their patients' well-being.

This chapter addresses training for the survival situation. It covers the basics of survival during and after a plane crash.

Learning Objectives

Upon completion of this chapter, the participant should be able to:

- ▶ List the most important survival tool and three other essential components of survival.
- ▶ List seven responsibilities of the air medical escort during a crash.
- ▶ Describe the position an air medical escort should take in the case of an expected crash landing.
- ▶ List the four essential components of a personal survival kit.
- ▶ Describe five items typically found in an aircraft survival kit.

- ▶ List, in order, the seven steps to survival.
- ▶ Describe nine steps to take to request help over the aircraft radio.

Surviving an In-Flight Emergency

The occupants of air medical aircraft are at risk for in-flight emergencies and emergency landings. Air medical escorts must develop survival skills so they can prepare for these challenges. Flying in Alaska involves long distances, unpredictable weather, and some fierce terrain.

Psychological aspects, especially the will to survive, strongly influence the outcome in adverse circumstances. Being prepared involves thinking, “You never know how your day is going to end.”¹ A positive mental attitude can help people:

- Use fear constructively.
- Avoid or control panic.
- Maintain the will to live.

The most common reasons for failure to survive a survivable crash are that people:

- Have a poor attitude or give up.
- Are careless.
- Lack equipment or do not know how to use it.
- Are unable to adapt to a situation or environment.

Preparation

Flight crewmembers, including the air medical escorts, should have knowledge of aircraft safety, fire fighting equipment, and evacuation procedures. Certified air ambulance services are required to provide

¹*Marine Safety Instructor Training Manual*, 1999, p. A-4

annual emergency training for their flight crews. Responsibilities of air medical escorts include:

- Knowing the location of all emergency exits and how to operate each.
- Memorizing where the exits are in relation to where they are sitting. Escorts should visualize how to open the exit in case they are unable to see anything.
- Giving the preflight briefing to the patient and any non-medical escorts if the pilot requests it. The preflight briefing is a pilot responsibility, but he or she can designate the medical escort to give the briefing.

One major difference between ground and air medical transport is the need to brief the patient about safety features in the aircraft, unless the patient is unconscious. This information includes:

- Where the emergency exits are, even though escorts will be assisting them in an emergency.
- What will happen in the case of decompression. If the patient is already on oxygen by mask, the oxygen they are using probably has a higher flow than the masks dropping from the ceiling of the aircraft. (Merlins and Metroliners have masks that plug into a wall receptacle.)

Escorts should document that they have reviewed safety and emergency procedures with each patient. If patients are fully immobilized, escorts should try not to frighten them. Escorts should remain calm, give patients a briefing of the situation, and assure them that they are there to help.

Aircraft Crash Survival

Sometimes there is a warning before an impending crash. It is standard procedure for the pilot to inform occupants when the aircraft is in trouble. If escorts receive warning that an emergency landing is imminent, they should:

- Turn off all electrical systems.

- Turn off oxygen systems—it poses an increased fire hazard and can make it more difficult for the patient to exit the aircraft.
- Secure loose objects—anything that is not tied down could become a lethal projectile.
- Secure the seatbelts or patient restraints for the patient.
- Move seat backs and tray tables (if present) into their fully upright positions.
- Secure IV bags and tubing or discontinue the line if at all possible.
- Ensure that monitor cables and power cords are out of the way.
- Remind patients and other passengers about the locations of exits and how to operate the exits.

Once the air medical escorts has secured the cabin, they must secure themselves into their seats and should:

- Review the exit procedures in their minds.
- Visualize getting themselves to the exit and opening the door if it cannot be seen.
- Mentally review exactly what they are going to do, “release seat belt, move two feet forward, and one foot to the left, feel the door, find handle and move it to the left....”

Seats and crash positions:

- Airline seats are designed to fold forward to dissipate some of the forward forces of the crash. If a seat is not fully upright, it may fail to fold forward, causing injury to the person in the row behind the improperly placed seat.
- Specially equipped air medical aircraft may have different settings for seats. Escorts should be familiar with the appropriate settings for the seats. For example, if the seat rotates to face the patient in flight, it may need to be returned to its forward facing position for take-off and landing.

- Since much of the velocity of the aircraft is in a forward direction, it is important to plant the legs firmly on the floor. It may be helpful to have them slightly under the person's own seat, so the legs are driven into the floor and don't fly forward and upward causing fractures of the tibias.
- After a crash, air medical escorts may need to assist the pilot in shutting off the battery and fuel switches.
- Air medical escorts should operate emergency exits as needed. Larger exits should be checked first, but are more likely to have become jammed shut by the forces acting on the airframe.

Air medical escorts must assume the crash position.

- In a seat with a lap belt only, make certain that the belt is low down on the hips and snug, lean forward and lock arms underneath the legs. One arm can stabilize the neck, while the other wraps around the thighs.
- In a seat with lap and shoulder straps, remain upright and keep hands and feet away from any aircraft controls.
- All passengers should maintain crash position until all movement stops.

When motion has stopped, exit the aircraft by the method visualized. Once the exit is open, evacuate the patients.

If the aircraft crashes into water, it may be necessary to let the aircraft fill with water in order to open the doors. Water pressure against the aircraft may be so great that the doors may not open. Allowing the aircraft to partially fill with water equalizes the pressure and makes it easier to open the doors.

The danger of fire is high on or shortly after impact. Hot engines and sparks from the electrical system can ignite fuel fumes. Fire resistant clothing, such as flight suits made of Nomex®, are designed to withstand a few seconds of fire. They offer some protection from flash fires.

Once all occupants are safely evacuated from the aircraft, air medical escorts should note whether there are fuel fumes. If there are, it is wise to disconnect the battery until the aircraft engine cools and fuel fumes have dissipated.



Photo courtesy of Learn to Return Training Systems, Anchorage.

Emergency Landing Procedures—Helicopter

While there are many similarities between an in-flight emergency in fixed and rotor wing aircraft, there are some differences between them.

There are two types of emergency situations that may result in an emergency landing when flying in a helicopter:

- The sudden emergency (like a wire strike or a control failure). In a sudden emergency, the crew may have minimal or no notice. There may or may not be enough time to duck into crash positions.
- The in-flight emergency. During an in-flight emergency, there may be more time to react. The flight crew will want to double check that all items are strapped securely and that all seat belts (their own as well as the patient restraint system) are buckled tightly.

Helicopter crash position

The helicopter crash position may be slightly different from that used in a fixed wing aircraft.

- The main force in a helicopter crash is downward so helicopter seats are designed to collapse to absorb some of the energy. Therefore, feet should not be tucked under helicopter seats during a crash. Both feet should be firmly on the floor, directly below the knees or slightly in front of the knees.
- Passengers should bend forward at the waist using their thighs to support their torsos. One of their arms may be wrapped around their necks to stabilize their heads while their other arms wrap around both of their legs. This position keeps their torsos and thighs together.
- If helmets are being worn, the communications jack must be unplugged and the boom mike swept back, to lessen the chance of sustaining facial injuries. According to the U.S. Department of Transportation Guidelines for Air-Medical Crew Education in 2001, research has shown that pilots not wearing helmets were six times more likely, and rear occupants were over seven times more likely, to sustain a fatal head injury than those wearing helmets, helmets are strongly recommended.

- If there is time, remove eyeglasses and take sharp objects out of pockets. Be sure to secure them so they do not fly around the cabin during impact.

After the landing, the air medical escorts may have to assist the pilot in turning off the batteries and the fuel control switch to reduce the chance of fire.

Everyone should exit the aircraft and move a safe distance away from it until the risk of fire has passed. Generally, it is a good idea to stay near the aircraft, as the Emergency Locator Transmitter (ELT) will help rescuers locate the site of the crash.

Wilderness and Arctic Survival

Survival Kits

An aircraft survival kit is required on all small aircraft flying in Alaska. Air medical escorts should know where it is on the plane. In addition, escorts should equip themselves with personal survival equipment that can be carried with them. The only survival gear air medical escorts can count on having in an emergency, is what is on their person. The rest is camping gear; nice to have, but not to be relied upon since it may be left in the aircraft if a rapid evacuation is needed (e.g. after a water landing or a fire).

Aircraft Survival Kits

Alaska Statute 02.35.110: Emergency Rations and Equipment, requires aircraft carry the following items as a minimum for cross-country flying:

During the summer months:

- Rations for each occupant sufficient to sustain life for one week.
- One axe or hatchet.
- One first aid kit.
- An assortment of tackle such as hooks, flies, lines, and sinkers.

- One knife.
- Fire starter.
- One mosquito head net for each occupant.
- Two small signaling devices such as colored smoke bombs, railroad fuses, or flare gun shells, in sealed metal containers.

Between October 15 to April 1, the additional equipment below must also be carried:

- One pair of snowshoes.
- One sleeping bag.
- One wool blanket or equivalent for each occupant over four [occupants].

The requirements are a bit different for multi-engine aircraft licensed to carry more than 15 passengers, but few air medical transports are flown in these larger aircraft.

Aircraft companies may add other items to the minimum requirements. The following items are recommended:

- A shovel
- A plastic canteen and cups
- A compass
- An emergency radio or mobile satellite telephone
- Water purification tablets
- Candles or candle lantern
- A snow/ice saw
- A stove and fuel
- Dry clothes and boots

Personal Survival Kits

Air medical escorts should dress appropriately for the outside weather and carry a knife with them, when it is allowed by the air ambulance service or the airlines. They also should carry a personal survival kit that fits into their pockets. People usually find themselves in a survival situation with only what they have in their pockets.²

Personal survival kits should contain:

- Signaling material.
- Items to help shelter the person.
- Fire starter.
- Personal medical needs like prescription medications and extra glasses.

These kits may contain other items to aid in survival. Each kit is personal, so items will differ based on personal preference and experiences. The following is a list of some suggested items:

- Fire starter and waterproof matches
- Tin foil
- Energy bar
- Fishing hook and line
- Single edge razor blade
- Signal mirror
- Water container
- Snare Wire
- Aspirin
- Betadine
- Personal medications
- Band-Aids

²AMSEA, *Maritime Safety Manual*, 1999, p. A-8.

- Gauze
- Tape
- Space blanket
- Large plastic garbage bags
- Twine or nylon line
- Whistle
- Small bright flashlight
- Candles
- Compass

Containers for personal survival kits can be similar in size to a plastic cigarette case or a pint-size Ziploc™ bag. A watertight container is best.

Comfort Kit/“Camping Gear”

Larger kits can be carried in packs. These kits can turn the survival situation into a camping trip. Their size allows escorts to carry items such as:

- A “tube tent.”
- A lightweight tarp.
- A container in which to boil water.
- Drinking cups.
- A bigger knife.
- A multipurpose tool.
- Extra clothing.
- A flare kit.
- High energy compact foods.
- A water filter.

Contents included in comfort kits tend to vary between individuals based on their past experience and personal preferences.

Aircraft as Survival Kit

Another source of survival equipment is the aircraft itself. Creativity helps the survivors to fully use the different parts of the aircraft. The following list has some suggested uses of aircraft parts:

Part	Uses
Air Filters	Fire starter
Aluminum skin	Reflector for warmth
Batteries	Fire starting, signaling with lights
Charts, maps	Stuff inside clothing for insulation
Compass	Establishing direction
Control cables	Binding for shelter, splints
Doors	Shelter, windbreak
Engine cowl	Shelter, water collection, windbreak, fire platform
Engine magnetos	Spark producer for starting fires
Engine oil and fuel	Fire starter, fuel for fire, black smoke for signaling
Fabric skin	Fire starter, water container/collector
Fuel cells	Melt snow on, as signal burn or lay on ground
Fuselage	Shelter for wind/rain protection; in snow environment will quickly become an icebox
Hoses	Siphon gas
Inner tubes	Water container, elastic binding material when cut, black smoke for signaling
Inside fabrics	Water strainer/filter, clothing, bandages
Landing lights/strobes	Signals when used with battery, lights at night
Nose spinner cone	Bucket, stove with container for sand, oil and fuel
Oil filter	Burn for black smoke
Rotating beacon lens	Drinking cup, digger
Rugs	Ground pad insulation, clothing, mukluks
Seats	Sleeping cushion, back brace for spinal injury, insulation, ground pad, sponge rubber for neck support, material can make mukluks, padding can insulate mukluks, stuff inside clothing
Seatbelts	Binding material, slings, bandages
Tires	Black smoke
Vertical stabilizer	Shelter support, platform
Windows	Snow block cutters
Wings	Windbreaks, shelter supporters, platform for fire, backboard, water collector
Wing tips	Drip collection, water carrier

Part	Uses
Wiring	Binding and rope
Wooden wing struts	Braces, props, fire starter and fuel

Seven Steps To Survival

The Seven Steps to Survival are steps to help people identify and prioritize their needs in life-threatening situations. They are listed in order of priority but their order can change depending on circumstances. In order, the seven Steps to Survival are:

1. Recognition

Before people can help themselves they must admit that they have a problem and that if they do not take action they may die. Air medical escorts must change roles in this process and put survival ahead of their role as a healthcare provider. They must think like a survivor because they are responsible not only for their own survival but are also obligated to care for their patients as much as possible.

2. Inventory

Stop, Think, Observe, and Plan. What is done in the first few minutes can determine the outcome of the situation to a great extent. Energy should be used thoughtfully.

During the inventory step, review assets and liabilities. This includes a physical inventory of everyone's survival gear and equipment and an assessment of:

- Aircraft communications.
- Useable aircraft parts.
- Location.
- Weather.
- Time of day and tide, if applicable.
- Animals in the area.

Inventory also includes an assessment of people's strengths and weaknesses; it is the time to give medical care to anyone injured during the crash or emergency landing.

Imagination and creativity help in this step. In one situation passengers on a crashed helicopter used the Rubbermaid® box from the survival kit to mold snow blocks and build an igloo. They used the chin bubble as a skylight!

Inventory needs to be taken every time the situation changes.

3. Shelter

Shelter is anything that protects people from their environment. Clothing is the primary shelter. An effective and efficient shelter is:

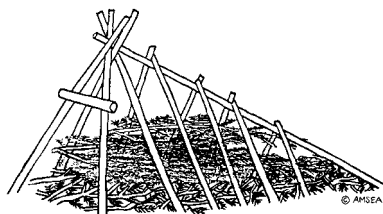
- Small.
- Insulation from the environment, especially from the ground.
- Weatherproof.

The aircraft is not a good long-term shelter unless it is being used as a windbreak or to get out of the rain. The space is too big to heat efficiently and the metal conducts cold. Human bodies usually provide most or all of the heat inside a survival shelter. The temperature in a snow trench with the entrance blocked can be raised to 25–30°F (-4 – -1°C) by body heat and a small stove.³ Care must be taken to avoid raising the temperature too high, to prevent the snow from melting and getting things inside the shelter wet.

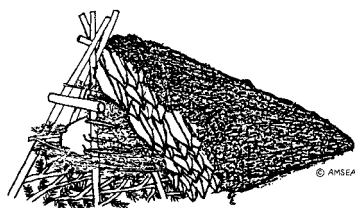
With all types of shelters, insulation between people and the ground must be thick. Heat is lost much faster to the ground than to the air. Since water conducts heat 25 times faster than air of the same temperature, the drier the insulation, the better.

Small and low are important concepts when it comes to shelter construction. The ceiling should be just high enough to allow people to turn over when lying down. The shelter is a glorified sleeping bag. It should be just big enough for all the occupants to lie and touch each other.

³Warren D. Bowman, *Wilderness Medicine: Management of Wilderness and Environmental Emergencies*, Chapter 8, *Altitude Emergency*, P. S. Auerbach (Ed.) 4th edition, Mosby Publishers, Portland, OR, 2001, p. 681.



Building the floor of a Debris Shelter



Completing the Debris Shelter

Diagrams courtesy of AMSEA. ©2002



Snow Cave diagram courtesy AMSEA, © 2002.

⁴Alaska Marine Safety Education Association (AMSEA) staff, *Surviving Outdoor Adventures*, Volume 3, University of Alaska Sea Grant College Program, Fairbanks, 2002.

⁵Alaska Marine Safety Education Association (AMSEA) staff, *Surviving Outdoor Adventures*, Volume 3, University of Alaska Sea Grant College Program, Fairbanks, 2002, p. 152.

⁶<http://geosurvey.state.co.us/avalanche/Default.aspx?tabid=56>, 5/24/05.

Debris Shelter⁴

Use whatever materials are available to make shelters. Be concerned about efficiency, not looks. The dryer the material, the better.

In areas with trees, branches are an efficient material, especially for the walls and roof. Layering the roof from the bottom up provides better protection from precipitation. The directions below and pictures at left illustrate the shelter building process.

The first step involves building the floor. The floor:

- Must be three feet thick.
- Can be made of branches, leaves, moss, grass, etc.
- Should be covered with a waterproof layer if wet materials are used.

After the floor is completed:

- Cover the roof and sides with a waterproof barrier (plastic, leaves, bark, etc.).
- Make sure you can't see light through the shelter.
- Close the entry with a removable door (like a plastic bag full of leaves or grass).

Snow Cave

Snow shelters offer more insulation than the fuselage of the aircraft. Snow caves are best built into an area with at least a 20° slope.⁵ Too steep a slope is a dangerous location. Ninety percent of avalanches start on slopes between 30–45° and 98% of avalanches start on slopes between 25–50°.⁶

A cold sump is important to build so that the coldest air settles there. Hot air rises. The cold sump should be below the sleeping platform.

Ventilation is critical. The vent hole should be at least as big around as a human thumb. It should be much larger if there is a fire giving off carbon monoxide in the shelter.

Heat should not exceed 32°F. If the shelter is too warm inside, the snow will melt, then freeze and glaze over. Ice does not insulate, but snow does. If the snow cave begins to glaze on the inside, the glazing

must be scraped off. If the glaze cannot be removed, a new snow cave must be built.

Snow Trench

Snow trenches can be built in open flat country. Steps to follow to build a snow trench:

- Locate a windbreak.
- Cut a trench about 12–18 inches wide and six feet long perpendicular to the windbreak.
- Dig out if a cover is available, or cut snow blocks out of the trench if no cover is available.
- The trench should be about three feet deep with one end sloping up to the surface for a door.
- Carve a sleeping bench.
- Place something over the top, such as tree branches, aircraft parts, or cut snow blocks.
- Insulate the top with snow.
- Block the entrance hole with snow blocks, or a trash bag stuffed with grass.
- Make a cold sump.
- Insulate the ground.
- Make an air hole for ventilation.

Molded Dome⁷

If there is not enough snow to build a snow cave and the snow is not wind-packed enough to cut blocks, a molded dome is a good choice. To make a molded dome, snow is piled in a dome shape. Let it sit for 24 hours, then hollow out a dome.

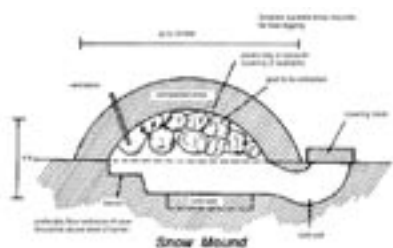
If excess gear is available, the snow can be piled over it in a dome shape. Steps in building it:

- Probe snow for trees, logs, rocks, etc.



Snow Trench diagram courtesy AMSEA, © 2002.

⁷Alaska Marine Safety Education Association (AMSEA) staff, *Surviving Outdoor Adventures*, Volume 3. University of Alaska Sea Grant College Program, Fairbanks, 2002.



- Stomp the diameter into the snow.
- Pile gear in a mound in the center.
- Pile four to six feet of snow on top of the gear.
- Pack the snow firmly.
- Poke holes with sticks or poles 18 to 24 inches into the mound to mark the depth of the walls.
- Let the mound sit for one to two hours and then hollow it out.
- Start the door as low as possible to build the cold sump.
- Tunnel under the mound and remove the gear.
- Dig the sleeping bench and excavate inside to the ends of the poles or sticks.
- Dig ventilation holes.

With either natural or man-made shelters, snow is a good additional insulator. A minimum of 8 inches of snow will provide insulation. Pack the snow over tree branches or over a tarp.

4. Signals

Signals must attract attention and convey a message. They attract attention by being:

- **Bigger**—Signals should be as big as possible. The recommended ratio for the width of the lines in an SOS is 6 to 1. For example: If the letter is 12 feet high, then the lines that make up the letter should be 2 feet thick.
- **Brighter**—Neon colors are most visible from a distance, but they must contrast with the background.
- **Different**—Color that contrasts with the background is noticed by the eye. Straight lines stand out since they are not normally found in nature. Signals on the beach should be at right angles to the water. Movement also catches the eye. Things blowing in the wind and ripples on the calm water catch the eye.

Three of anything is considered a sign for help. A single fire may be mistaken for a campfire. Two fires are a big party. Three fires mean, “Help!”

There are two types of signals:

- **Active**—An active signal requires someone to take action to make it work. It should be used when a potential rescuer is in sight. This could be a flare, a signal mirror or communicating on an emergency radio or cell phone.
- **Passive**—A passive signal is always working. This could be an Emergency Locator Transmitter (ELT), three bright things tied in trees, or the word “HELP” stamped out in the snow.

Signals can also be categorized by way they are detected. Three methods are listed below:

- **Auditory**—Auditory signals are ones that people hear. Whistles are the principal way that people make more noise without using much energy. ELTs give off a sound that is heard on passing aircraft radios.
- **Visual**—Visual signals should be seen from the air, the land and the sea. Common examples of visual signals are the SOS, flares, mirrors, reflective tape, strobe lights, fire, and chemical light sticks. Some of these are visible only from one angle so a combination is most effective.
- **Electronic**—Electronic signals can contact help quickly and efficiently. If they work they are the best signals because they can shorten the time until rescuers arrive. Common examples of electronic signals are ELTs, PLBs, VHF radios, cell phones, satellite phones and Citizen’s Band radios (CBs).

Aircraft radios are an excellent signaling device when they work. Air medical escorts need to learn how they work and how to switch channels on them.

The emergency frequencies are 121.5 and 243.0, or Marine Channel 16.

If the radio’s antennas are not attached correctly, they can suffer irreparable damage. Antennas can be damaged during a crash. They are located on the underside of the fuselage of helicopters.

Radios and antenna cables may need to be removed from the aircraft and set up in a more suitable location. Do not operate radios anywhere near a fuel leak or fuel fumes.

The technique for making an emergency radio call is as follows:

1. Make sure the radio is operational.
2. Make sure the radio is turned on and is on the emergency broadcast frequency.
3. Adjust the squelch if necessary.
4. Identify the aircraft or party on the aircraft.
5. Give the location of the party.
6. State the number of people.
7. State the nature of the problem.
8. Release the microphone and wait for an answer.
9. If there is no answer, repeat the entire message.

ELTs are located in the tail on most fixed wing aircraft and in the nose on helicopters. They are supposed to activate automatically in the event of a hard landing. After a crash, escorts should find and remove the ELT from the aircraft, attach the external antenna and turn the device on. Once the ELT is on, it should remain on. ELTs are detected by orbiting satellites, which can take time to move into position over the wreckage. Some rescue organizations may require the that ELT signal be detected by more than one satellite on a single pass before sending out searchers.

5. Water

It is necessary to stay well hydrated in a cold climate. Two to four quarts of non-dehydrating fluids a day is recommended for most people. When under stress, people need more water than they normally do. In a survival situation getting safe water to drink can be a challenge. Rainwater collected in a clean container is safe. There are also three methods of treating water:

- Boiling it for 10 minutes, plus 1 minute for each 1,000 feet of elevation.

- Filtering it if a filter is available.
A filter with a maximum 3–5 microns is needed to screen out giardia cysts.
- Treating it with iodine, chlorine or halozone.
Chemicals become outdated, so checking labels is important. Follow the directions provided. They are not always effective and some people may have allergies or reactions to the chemicals.

6. Food

Food is not needed immediately for survival, but it is essential for producing body heat. For patients who are mildly hypothermic, fuel shivering with simple sugars⁸ (a cola containing sugar is more important than hot tea without sugar). For a person who is normothermic, carbohydrates, fats and protein are the best sources of energy in a survival situation.

Food also is important in keeping up morale.

7. Play

Any positive activity that helps create and maintain a positive attitude is play. Research has shown that mental attitude plays a large part in survival. People who have a positive outlook and are not overwhelmed by events survive in circumstances where other people do not.

Survivors describe overcoming each obstacle as it is presented. It can be overwhelming to think of the entire situation and how to handle it all.

They also describe thinking about “after they are rescued” and having a compelling reason to live.

They continue to improve their living situation by improving their shelters, signals, water systems, etc.

A positive attitude is the survivor’s most important survival tool.

⁸State of Alaska *Cold Injuries Guidelines: Alaska Multilevel*, 2003 version 2005, p. 10.

The Seven Steps to Survival also can be useful in planning.

1. Recognize the potential problems over water, over land, when the aircraft burns, etc.
2. Do a mental inventory to plan equipment and training needs.
3. Address the different shelter needs within each problem situation.
4. Address the potential signal problems in the planning stage.
5. Anticipate water needs and provide for them.
6. Do a mental inventory of food sources in the different survival scenarios and address any potential problems.
7. Address things that could lower morale in different survival scenarios. This process of planning should improve confidence and the ability to handle emergencies and, therefore, add to a positive mental attitude.

Planning should address training in survival skills and equipment.

Summary

This section has only lightly touched upon the subject of survival. There are many sources for further study and for training on this subject. Training is available from a number of agencies in Alaska. In addition, experts in local areas are a good resource. Hunters, dog mushers and pilots sometimes have valuable information and skills to share.

People with training do better in emergency situations than those without training.

Survival is not something that can be learned entirely in a classroom situation or by reading a book. Training that includes hands-on learning involving “surviving” a night or two outdoors is the best preparation.